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ABSTRACT

Rapid developmental changes amplify early adolescent children's susceptibility to stress. A lack of refined coping skills accompanied by an increase in stress factors affecting young adolescents contributes to their use of counterproductive approaches to stress management. To examine the frequency and intensity of early adolescent experiences with stress, 3,382 middle level students (grades 6 through 8) from 13 schools representing Delaware, Maryland, Kentucky, Missouri, Michigan, Indiana, and Arizona, completed the Early Adolescent Stress Inventory. Using a five-point scale, subjects indicated their levels of experienced stress on 43 items. Both urban and rural communities varying in population from 1,250 to over 1 million were included, and student enrollment in participating schools ranged from 392 to 1,029. The students reported stress in all aspects of their lives. Of the 20 most stressful items, 7 were experienced by 82-95 percent of the subjects; these included taking tests, speaking in front of class, grades, and personal appearance. Females reported experiencing more stressors and more intense reactions than males. Additionally, special education students reported more stressful reactions than other students. Education's contribution to early adolescent stress cannot be ignored; emphasizing academic achievement without also dealing with other developmental concerns serves to compound the effects of stress. (27 references) (KM)

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AN ASSESSMENT OF EARLY ADOLESCENT STRESS FACTORS

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Abstract

This study examined the frequency and intensity of early adolescent experiences with stress. A sample of 3382 middle level students from thirteen states responded to the Early Adolescent Stress Inventory. Using a five-point scale, subjects indicated their levels of experienced stress on forty-three items. Findings revealed that many sources of early adolescent stress were chronic in nature, related to developmental tasks, pertained to academic achievement and differentially affected young adolescents. The transescent at greatest risk for both experiencing more sources of stress and reacting more stressfully to them was an eighth grade female enrolled in special education. An increased awareness of sources of early adolescent stress serves to both aid young people in the coping process and encourages adults to provide the necessary support systems.

The experience of rapid developmental changes by early adolescents increases their susceptibility to stress. A lack of refined coping skills accompanied by an increase in stress factors affecting young adolescents, contributes to their employment of counterproductive approaches to dealing with stress. Increasing rates of drug and alcohol consumption reflect this lack of coping skills.

The adverse effects of stress underscore the need to heighten public awareness. Chronic stress interferes with academic performance as well as mental and physical health. Exposure to chronic stress without the necessary coping skills acts as a barrier to success and happiness.

Although the topic of stress receives increasing public attention, little of this attention focuses on young adolescents. This study develops a cognitive awareness of stress factors affecting early adolescents by examining the following questions:

1. To what degree do early adolescents experience identified stressors?

2. Which are perceived as most stressful?

3. What is the relationship between sex, grade level and class enrollment (honors, special education, neither) and students' perceptions and experiences of different stressors?

Vulnerability to stress involves the complex interaction of many variables including multiple stressors, perceived severity and duration of exposure, changes in circumstances, an individual's internal and external resources and support (Chandler, 1982; Hawkins, 1982). Periods of developmental transition expose the individual to many changes, thereby, increasing one's susceptibility to stress (Cohen & Cohen, 1984) and the likely appearance of distress symptoms (Hawkins, 1982).

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Early adolescence, characterized by rapid developmental changes, becomes a period of heightened vulnerability to stress.

Moreover, changing social conditions expose young adolescents to additional sources of stress. One out of three marriages ends in divorce (Chandler, 1982). The divorce often acts as a catalyst for other changes in a child's life - loss of a parent, a move, school changes, financial problems and adjustment to a stepparent. Children from disrupted families (divorce, fighting, death) are more likely to display antisocial behavior (Chandler, 1982), run away (Van Houten & Golembiewski, 1978), attempt suicide (Gispert, Wheeler, Marish & Davis, 1985), exhibit psychological disturbances (Hawkins, 1982) and commit delinquent acts (Novy & Donohue, 1985). One fourth of the children of divorce still reveal symptoms of distress (depression, anger, loneliness) five years after the divorce (Medeiros, Porter & Welch, 1983).

Increased mobility acts as another source of stress. The average American family moves once every five years. Moving is most stressful for children from ages six to eleven (Medeiros, et al., 1983). Like divorce, moving initiates a series of other changes in a young person's life such as going to a new school and making new friends.

While exposed to many developmental and social changes, early adolescents lack experience and resources for dealing with stress. Their lack of refined coping skills (Chandler, 1982) and their difficulty in intellectually understanding stress (Medeiros, et al., 1983), further exacerbate its effects.

Poor coping responses can contribute to distress. Truancy, delinquency, substance abuse, conflict with adults and pregnancy are symptomatic of stress (Grannis, 1985; Hash & Vernon, 1987; Novy & Donohue, 1985; Van Houten & Golembiewski, 1978). Early adolescents are particularly susceptible to employing these responses. Runaways reported that in response to pressures, they started drinking between the ages of thirteen and fifteen (Van Houten & Golembiewski, 1978). Students in grades six through nine are at greatest risk for alcohol and marijuana use (Gullotta, 1983). These counterproductive responses increase vulnerability to stress.

At some point, pressures manifest themselves physically. Physical symptoms related to stress include hives, rashes, headaches, stomach ulcers, diarrhea, cramps, respiratory infections, coronary heart disease, asthma, cancer, insomnia, allergies, rheumatoid arthritis, hypertension (Basch & Kersch, 1986; Chandler, 1982; Hash & Vernon, 1987; Wolf, Sklov, Wenzl, Hunter & Berenson, 1982) and nearsightedness (Brain/Mind Bulletin, 1982). Research on the mind/body connection continuously suggests new links between health and coping responses.

Stress can also impede academic and social functioning along with one's sense of well being. Anxiety impairs attention, concentration (Chandler, 1982; Schultz & Heuchert, 1983), problem-solving (Mullins, Siegel, & Hodges, 1982), and general academic achievement (Cook, 1982; Krohne & Laux, 1982). Greater life stress is associated with depressive symptoms (Mullins et al., 1982) and suicide risk (Gispert et al., 1985). As one experiences more stress, an individual's ability to

adapt to new stress is reduced (Chandler, 1982).

Although the response to stress is individual (Chandler, 1981), its effects are cumulative and increase geometrically with additional stressors (Medeiros, et al., 1983). These effects may be long term if not addressed (Cook, 1982).

Prior research suggested a relationship between susceptibility to stress and sex. Studies investigating sex differences reported conflicting results. Some found that early adolescent girls experienced more stressors (Henderson & Dickey, 1988) and perceived these more intensely than boys (Basch & Kersch, 1986). Other research suggested that boys were at greater risk (Medeiros et al., 1983). Internal factors contributing to this vulnerability included the exhibition of more Type A behaviors (Hawkins, 1982) and perceptions of low self-esteem by underachieving males (Purkey, 1970). The nature of the stressor also contributed to sex differences: Boys found moving (Medeiros et al., 1983) and parents fighting more stressful (Hawkins, 1982) while girls reported more peer relationship stressors (Henderson & Dickey, 1988). These findings warrant further investigation into the complex, multivariate nature of stress.

Studies also suggested an association between grade level and class enrollment and stress. The experience of peer relationship stressors increased from fifth to eighth grade (Henderson & Dickey, 1988). Educational dysfunctions heightened stress susceptibility (Smith & Leavitt, 1979). Students enrolled in gifted classes held similar perceptions of stressors to non-gifted, but reported infrequently experiencing the most stressful events. Stressors related to academic achievement, social status and career aspirations were rated more stressful for gifted than non-gifted students (Karnes & Oehler-Stinnett, 1986).

As more attention nationally was directed to students at the middle level, more researchers focused on factors placing early adolescents at risk. Some limitations existed in stress studies conducted to date. Small samples and relatively homogeneous subjects (Henderson & Dickey, 1988; Yeaworth, York, Hussey, Ingle & Goodwin, 1980) limited generalizability. Developers of stress assessment instruments did not request input from early adolescents in the identification of stressors (Chandler, 1981; Yamamoto, 1979; Yeaworth et al., 1980). This study attempted to address those limitations.

Research Design

Sample

The sample consisted of middle level students (grades six through eight) from several states. Thirteen schools (3382 subjects) representing the states of Delaware, Maryland, Kentucky, Missouri, Michigan, Indiana, and Arizona participated in the study. Communities included urban and rural settings varying in population from 1,250 to over one million.

The schools varied in size and organizational structure. Student enrollment in participating schools ranged from 392 to 1029. Three schools were junior highs, one was in transition from a junior high to a middle school and eight were middle

schools. One optional school with an informal, supportive environment designed to enhance the development of a self-directed learning style participated. The middle schools represented a variety of organizational structures: teaming, departmentalization and core programs.

Instrumentation

A 44-item Likert-type stress inventory identified chronic and single event stressors experienced by early adolescents. A five-point scale provided data on subjective perceptions of stressor intensity. For stressors experienced, subjects indicated their present stress level, ranging from "No Stress" to "Very High Stress." The inventory enabled students to indicate if stressful events that occurred in the past (more than twelve months ago) still bothered them. The Early Adolescent Stress Inventory also requested demographic data on the variables age, grade, sex, and honors or special education enrollment. A review of the literature and self-report data from sixty middle school students identified the stressors. One hundred and sixty-one middle level students piloted the instrument in June, 1988. An analysis of this data guided revisions of the instrument.

Research Procedures

Administration of the Early Adolescent Stress Inventory involved taking steps to protect the rights of minors and assure clarity of directions. Participating schools either distributed an informed consent to be signed by parents or sent the researcher a letter stating that a research tradition existed in their school and parents were aware/ informed of this tradition. Anonymity of responses further protected subjects.

Teachers administering the inventory received both teacher and student directions. The directions explained the purpose of the inventory, reconfirmed the option of students to cease participating at any point, and provided criteria for interpreting the response scale. Teachers read the directions while students followed them on their copies. These measures were taken to reduce misinterpretation of the inventory directions. Teachers placed completed inventories in a sealed envelope to further ensure confidentiality.

Data Analysis

Statistical analyses of the combined data from all schools included frequency distributions by item and response categories. Intensity means were calculated for each stressor and rank ordered. A simple analysis of variance provided a basis for comparing item means by sex, grade level and class enrollment. Further comparisons were made by examining the five most stressful items by sex, grade level and class enrollment.

Results

Student responses to the Early Adolescent Stress Inventory provided feedback on which stressors they experienced and the intensity of those experiences. Most students reported stress in all aspects of their lives--at home, school, in

interpersonal relationships and with internal concerns. In examining the twenty most stressful items (see Table 1), seven were experienced by 82-95% of the subjects. These included four school-based sources of anxiety (taking tests, speaking in front of class, getting in trouble, and grades, report cards) and three from the personal/interpersonal domains (concern about personal appearance, arguments with friends, feeling rushed). Half of the twenty most stressful items were chronic and frequently experienced.

Table 1 indicates intensity means and rank orders them from perceptions of most to least stressful. Means ranged from 1.53 to 3.28 on a five-point scale. Intensity means of the twenty most frequently experienced sources of anxiety ranged from 1.63 (being around members of the opposite sex) to 2.77 (speaking in front of class) and averaged 2.31. Not surprisingly, the five most commonly experienced stressors pertained to school. These varied in levels of perceived anxiety from 1.95 to 2.77. Home variables affecting many young adolescents included getting along with parents (88%) and with brothers and sisters (86%). Students reported frequently experiencing the following peer interaction concerns: arguments with friends (86%), being accepted by others (82%) and being around members of the opposite sex (82%). Personal concerns held by many early adolescents included: concern about personal appearance (87%), making plans for my future (85%), feeling rushed (83%), feeling confused or uncertain (82%), feeling tired (82%), boredom (80%) and lack of privacy (79%).

The five top stressors were crisis events. Three involved dealing with death and two with academic failure. All had intensity means over three. Of the next fifteen most stressful items, ten reflected chronic concerns.

Home factors contributed to varying levels of anxiety. The death of a parent, brother/sister, or grandparent ranked amongst the top sources of stress. Two thirds of the students reported a serious illness or accident affecting a family member. The pilot test indicated that student responses to this item often involved extended family members, e.g., aunts/uncles, grandparents, cousins. Thus, many students faced coping with the difficult life experiences of illness and death of loved ones.

Other home conditions contributing to students' anxiety included parental relationships (parents fighting, parents divorced or separated) and a family member having trouble with alcohol or drugs. Over forty percent of the students felt substance abuse affected family members. These stressors reflect the changing nature of the American family and the difficulty adults also experience coping with stress.

Subjects' responses revealed that relationships with parents and siblings were low anxiety factors. The birth of a brother/sister was particularly unstressful. Parental expectations and moving were perceived as moderately stressful.

Several school related variables affected students. Judgments of academic competence (failing a subject, flunking a grade, grades, taking tests) and going to a new school were ranked among the top stressors. Attending a new school required establishing new peer relationships at a time when young people looked to others for perceptions of self and were developing their interpersonal skills. Related to this,

was the expressed anxiety students felt when required to speak in front of the class. Getting along with teachers appeared to be a source of minimal stress. Thus, school factors involving major judgments of academic competence or peer interactions were most stressful for young adolescents.

Table 1

Stressor Intensity Means and Ranks

Stressor	Mean	Rank
Death of a close friend	3.28	1
Failing one or more subjects	3.22	2
Death of a grandparent	3.17	3
Flunking a grade	3.15	4
Death of a parent	3.04	5
Breaking up with a close boy/girl friend	2.97	6
Speaking in front of class	2.77	7
Family member having trouble with alcohol/drugs	2.72	8
Concern about personal appearance	2.70	9
Going to a new school	2.70	10
Death of a brother or sister	2.67	11
Parents divorced or separated	2.65	12
Concern about own death	2.63	13
Grades, report cards	2.61	14
Serious illness or accident affecting family member	2.59	15
Parents fighting	2.59	16
Getting in trouble	2.56	17
Feeling rushed	2.55	18
Taking tests	2.50	19
Arguments with friends	2.50	20
Lack of privacy	2.49	21
Getting badly hurt or sick	2.47	22
Feeling confused or uncertain	2.45	23
Being accepted by others	2.45	24
Expectations of parent(s)	2.43	25
Peer pressures	2.43	26
Moved or moving	2.35	27
Marriage of parent to step-parent	2.35	27
Getting into drugs or alcohol	2.32	29
Homework	2.31	30
Getting along with brothers/sisters	2.28	31
Boredom	2.24	32
Getting along with parents	2.19	33
Decisions or worries about sexual behavior	2.18	34
Making plans for my future	2.17	35
Starting middle school	2.12	36
Athletic competition	2.07	37
Parent losing a job	2.01	38
Feeling tired	1.95	39

Being at school	1.95	40
Getting along with teachers	1.86	41
Being around members of the opposite sex	1.63	42
Birth of a brother or sister	1.53	43

Personal/interpersonal sources of stress revolved around peer relationships and reactions to environmental/developmental conditions. Ranked as the most stressful experience, death of a close friend weighed heavy on young people. Forty-three percent of the students reported experiencing the death of a friend. Closely related were concerns about one's own death and being badly hurt or sick. Loss of a close friend through breaking up and arguments with friends ranked in the top twenty stressors. Additional key interpersonal sources of stress included concern about personal appearance, being accepted by others and peer pressures. Subjects indicated similar levels of concern over feeling rushed, lack of privacy and feeling confused or uncertain.

Tables 2 through 4 illustrate comparative perceptions of the most stressful items. Four of the five most stressful items remained constant across all comparison groups (death of a close friend, failing one or more subjects, flunking a grade, death of a grandparent).

Table 2

Most Stressful Items by Sex

Rank	Combined	Female	Male
1	Death of a close friend	Death of a close friend	Failing one or more subjects
2	Failing one or more subjects	Failing one or more subjects	Flunking a grade
3	Death of a grandparent	Death of a grandparent	Death of a grandparent
4	Flunking a grade	Breaking up with boy/girl friend	Death of a close friend
5	Death of a parent	Flunking a grade	Death of a parent

Table 3

Most Stressful Items by Class Enrollment

Rank	Honors	Special Ed.	Neither
1	Death of a close friend	Death of a close friend	Death of a close friend
2	Failing one or more subjects	Death of a grandparent	Failing one or more subject
3	Flunking a grade	Speaking in front of class	Death of a grandparent
4	Death of a grandparent	Failing one or more subjects	Flunking a grade
5	Death of a parent	*Flunking a grade	Death of a parent

*Tied for rank 4

Table 4

Most Stressful Items by Grade Level

Rank	6th	7th	8th
1	Failing one or more subjects	Death of a close friend	Death of a close friend
2	Death of a grandparent	Flunking a grade	Failing one or more subjects
3	Death of a close friend	Failing one or more subjects	Flunking a grade
4	Death of a parent	Death of a grandparent	Death of a grandparent
5	Flunking a grade	Breaking up with boy/girl friend	Death of a parent

A summary of stress perceptions by sex, enrollment patterns and grade levels follows:

1. Sex differences. Females reported experiencing slightly more stressors and intenser reactions than males (see Table 5). The "present stress level" mean for girls (2.69) was significantly higher than that for boys (2.37). Girls perceived thirty-five of the forty-three items as more stressful. Analysis of variance indicated significant differences on twenty-one of these items, $P < .01$. In descending order of significance, the following stressors affected girls more: arguments with friends, breaking up with a close boy/girl friend, concern about personal appearance, being accepted by others, peer pressures, death of a close friend, feeling confused or uncertain, decisions or worries about sexual behavior, getting along with parents, moved or moving, parents fighting, serious illness affecting family members, taking tests, family members having trouble with alcohol or drugs, getting badly hurt or sick, concern about own death, feeling tired, marriage of parent to step-parent and death of a grandparent. Boys reported experiencing significantly greater stress being at school, getting along with teachers and doing homework.

2. Class enrollment differences. Special education students reported more stressful reactions to thirty-five of the forty-three items compared to other students. Eighteen of these were significant differences ($P < .01$): being at school, speaking in front of class, getting along with teachers, homework, lack of privacy, concern about own death, boredom, getting into trouble, getting badly hurt or sick, feeling rushed, feeling tired, grades/report cards, starting middle school, getting into drugs or alcohol, feeling confused or uncertain, taking tests, and athletic competition. Honors students indicated significantly more stressful responses to being accepted by others. In comparing the overall frequency and intensity of responses, special education students experienced both more stressors and significantly more "very high stress" reactions (see Table 5). The reverse held true for honors students.

Table 5

Intensity Level of Responses by Group,
Percent of Total Responses

	Left Blank	No Stress	Some Stress	Average Stress	Above Average	Very High Group Stress
Combined	29.5	23.8	17.5	12.8	7.7	8.8
Female	28.6	22.5	17.7	13.1	8.3	9.7
Male	30.4	25.2	17.2	12.4	6.9	7.9
Honors	32.9	22.2	18.9	12.9	7.4	5.7
SPED	26.1	23.5	14.9	11.7	8.3	15.6
Neither	29.1	24.2	17.4	12.9	7.7	8.7
6th	29.6	27.9	16.5	11.2	6.4	8.5
7th	31.9	22.2	17.8	12.7	7.2	8.2
8th	26.9	22.5	17.8	14.2	9.0	9.5

3. Grade differences. For three-fourths of the identified stressors, there was a trend towards more stressful reactions moving from sixth to eighth grade. Eighth graders reported significantly more intense stress responses on twenty-one variables and on the overall measure of present stress. In order of descending significance, the following items were more stressful for eighth graders: concern about personal appearance, being accepted by others, getting along with parents, making plans for my future, going to a new school, lack of privacy, speaking in front of class, expectations of parents, moved or moving, arguments with friends, breaking up with a close boy/girl friend, grades/report cards, parent losing a job, feeling confused or uncertain, taking tests, serious illness or accident affecting family member, peer pressures, athletic competition, death of a close friend, decisions or worries about sexual behavior and parents fighting. Seventh graders experienced significantly more stressful reactions to divorce or separation and starting middle/junior high school.

Discussion and Summary

Intensity means for stressors fall into the high average to low range. These are somewhat lower than means from a previous study (Basch & Kersch, 1986). Possible explanations include: sample variance--a relatively homogenous sample was used in the earlier study; differences in instrumentation--the present study incorporated considerably more chronic stressors; variance in scale interpretation--this study included criteria for interpreting the scale; response error--it is likely that some students indicated stress levels for items not experienced; and time regression--students were not limited to a twelve month period for indicating whether or not they experienced a stressor. Thus, moderate intensity means are likely an artifact of this study's design.

The Early Adolescent Stress Inventory data suggest several patterns:

1. Chronic nature of stressors. At least half of the twenty most stressful items are chronic sources of stress. Although the tendency is to dismiss such sources as minor irritations, these daily hassles are significantly related to mental and physical health (Cohen & Cohen, 1984; Hawkins, 1982; Miller et al., 1985). The pervasive nature of chronic stressors further accentuates the need for public awareness and support in assisting young adolescents in the coping process.

2. Developmental aspects of stress. Early adolescence, as a period of major changes, heightens susceptibility to stress. The most frequently experienced stressors reflect many normal developmental characteristics including establishing self-identity, sex roles, personal independence and peer relationships. As an example, speaking in front of class may raise concern about how others perceive you. How do I look? What will they think? I hope nobody laughs. I can't look at that cute guy--and a myriad of other thoughts linked with developmental tasks.

3. Academic achievement and stress. One fifth of the twenty most stressful items, including two of the top five, reflect judgments of academic performance. Yet, increased anxiety impairs attention and concentration, thus, further impeding academic performance. This vicious cycle is exacerbated by coping patterns related to poor academic achievement--smoking (Brunswick & Messeri, 1984), alcohol use,

running away and delinquency. Schools for early adolescents need to reexamine both the emphasis on academic achievement and the opportunities for success provided.

4. Differential vulnerability to stress. Responses to stress are highly individual yet certain patterns of susceptibility emerge. Females experience more stressors and react to them more intensely than males with the exception of responses to several school sources of stress. Peer sources of anxiety particularly affect girls. Special education students are at greatest risk, both for experiencing more sources of stress and responding to them more intensely than other students. The cumulative effects of stress may partially account for this increased vulnerability. Eighth graders tend to react more intensely to stressors than sixth or seventh graders. A composite profile of the most vulnerable early adolescent is an eighth grade girl in special education.

These patterns provide a basis for directing future research and guiding educators in better meeting the needs of transescents. Further research is needed on the complex, interactive nature of stress. The role of education in contributing to early adolescent stress cannot be ignored. It calls for a reexamination of the instructional focus at the middle level. Emphasizing academic achievement without also dealing with other developmental concerns serves to compound the effects of stress.

Optimal functioning requires assisting middle level students in developing coping skills. These skills include increasing one's cognitive awareness of personal stressors, changing attitudes toward uncontrollable sources of stress and developing problem-solving and decision making skills. Providing a supportive environment further mitigates the impact of stress.

Periods of transition heighten vulnerability to stress. Early adolescence is such a period. Easing the transition involves increasing both public and transescent awareness concerning sources of stress. Awareness is the first step towards coping and it is through coping that early adolescents emerge as productive young adults.

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